

CLAIMS

1. A system for signalling within optical or combined optical/electrical networks
c h a r a c t e r i z e d i n that one at a first
5 transmission node executes polarization multiplexing of
transmitted traffic, and that at one or more intermediate
nodes is executing one or more of the following processing
of the transmitted traffic:

demultiplexing of polarization of the received traffic
10 and/or

multiplexing by polarization and/or time divisional multiplexing of the received traffic, and/or

SOP-alignment of the received traffic.
2. System according to claim 1,
15 c h a r a c t e r i z e d i n that at least two states
of polarization are used for signalling.
3. A system according to claim 2,
c h a r a c t e r i z e d i n that said network is a
package switched network and that states of polarization
20 are changed at the beginning of every new package.
4. System according to one of the claims 2 and 3,
c h a r a c t e r i z e d i n that said states of polarization are changed between header and payload so as to
separate said header from said payload within the respective
25 package.
5. System according to claim 1 or 2,
c h a r a c t e r i z e d i n that the different states
of polarization are used for separating of QoS classes.

6. System according to claim 5,
c h a r a c t e r i z e d i n that the QoS classes are
given by the first transmission node controlling the state
of polarization.
- 5 7. System according to claim 1 or 2,
c h a r a c t e r i z e d i n that the derivative of
said state of polarization is used for separation of one or
a number of QoS classes.
8. System according to the claims 1 - 4,
10 c h a r a c t e r i z e d i n that a polarization beam
splitter is used where the effect at the outputs of the po-
larization beam splitter are monitored to detect the inter-
mediate states by intermediate states which will produce
output on both outputs of the polarization beam splitter,
15 wherein the state of polarization is defined from distribu-
tion of effect between said outputs and the mechanism for
monitoring combined with a switch to separate in a physical
manner.
9. System according to one of the claims 1 - 4,
20 c h a r a c t e r i z e d i n that a polarization beam
splitter is used to separate between said states of polari-
zation.
10. System according to claim 1,
c h a r a c t e r i z e d i n that the first transmis-
25 sion node and/or the other intermediate nodes comprise a
OPS module attached to a S-WRON node.
11. System according to claim 11,
c h a r a c t e r i z e d i n that said network further
comprises switches where packages of a first quality class
30 are forwarded optically, and packages of a second quality
class are forwarded electronic.

12. System according to claim 11,
c h a r a c t e r i z e d i n that the first quality
class is of the type GS, and the second quality class is of
the type BE.
- 5 13. System according to claim 11,
c h a r a c t e r i z e d i n that the electronic
switching matrix is of a type known from Prior Art, while
the optical switching matrix is a wavelength router.
14. System according to claim 13,
10 c h a r a c t e r i z e d i n that a number of wave-
lengths is reserved to the electronic switch, and a number
of wavelengths is reserved for the optical switch.
15. Method for handling of packages within optical package
switching network,
15 c h a r a c t e r i z e d i n that one at a first
transmission node executes polarization multiplexing of
transmitted traffic, and that at one or more intermediate
nodes is executing one or more of the following processing
of the transmitted traffic:
- 20 demultiplexing of polarization of the received traffic
and/or
- multiplexing by polarization and/or time divisional multi-
plexing of the received traffic, and/or
- SOP-alignment of the received traffic.
- 25 16. Method according to claim 15,
c h a r a c t e r i z e d i n that packages are sepa-
rated in a first and a second class, wherein the packages
in the first class are following e predefined route in a
network, and that packages in the second class is switched
30 by a package switch module.

17. Method according to claim 16,
c h a r a c t e r i z e d i n that at a receiving node
packages will be segregated into two classes, by way of
setting switches based on header information from said
5 packages.

18. Method according to claim 16,
c h a r a c t e r i z e d i n that at a receiving node
packages will be segregated into two classes, based on or-
thogonal states of polarization which represent the two
10 said classes.

19. Method according to claim 15 or 16,
c h a r a c t e r i z e d i n that when a first package
with a guaranteed quality arrives at a switch a controlling
device will register that the first package is present at
15 the input before the first package is delayed in a FDL in a
first pre-determined period of time, further an output is
reserved where the first package is supposed to be trans-
mitted.

20. Method according to claim 19,
20 c h a r a c t e r i z e d i n that the first predeter-
mined period of time has a period of time equal or longer
than the period for a second package with a lower QoS level
than the first package, and where the other package has a
max. allowed size.

25 21. Method according to claim 15,
c h a r a c t e r i z e d i n that statistically multi-
plexed BE-packages are interweaved with GS-packages where
the GS-packages follow a predetermined wavelength path.

22. Method according to claim 15,
30 c h a r a c t e r i z e d i n that said network com-
prises switches wherein packages of a first quality class
are forwarded optically and packages of a second quality
class are forwarded electronically.

23. Method according to claim 22,
c h a r a c t e r i z e d i n that the electronic
switching matrix is of well known type, while the optical
switching matrix is a wavelength router, and on the input
s of said optical switch the input signals will split depend-
ent of the polarization of the optical signal.